

Appl. No. 10/669,499
Amdt. dated September 19, 2005
Amendment

PATENT

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claims 1.-38. (canceled)

Claim 39. (currently amended) A method for analyzing mass spectra, the method comprising:

(a) detecting signals including signal intensities in a plurality of spectra, wherein each spectrum in the plurality of spectra comprises data representing signal strength as a function of time-of-flight, mass-to-charge ratio, or a value derived from time-of-flight or mass-to-charge ratio;

(b) forming at least one signal cluster by clustering signals with similar ~~times-of-flights~~ time-of-flights, mass-to-charge ratios, or values derived from ~~times-of-flights~~ time-of-flights or mass-to-charge ratios;

determining a predetermined number of signals, wherein the predetermined number of signals represents a minimum number of signals for a selected signal cluster;

(c) selecting one or more signal clusters from the plurality of signal clusters if the number of signals in a signal cluster meets or exceeds a the predetermined number of signals and excluding one or more signal clusters from the plurality of signal clusters if the number of signals in a signal cluster is below the predetermined number of signals; and

(d) selecting the ~~times-of-flights~~ time-of-flights, the mass-to-charge ratios, or the values derived from the ~~times-of-flights~~ time-of-flights or the mass-to-charge ratios of the selected one or more signal clusters in (c).

Claim 40. (currently amended) The method of claim 39 wherein the plurality of mass spectra is a first plurality of mass spectra and wherein the method further comprises:

(e) forming a second plurality of mass spectra, wherein the second plurality of mass spectra is formed using the selected times-of flights ~~time-of-flights~~, the mass-to-charge ratios, or

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the values derived from the selected times-of flights ~~time-of flights~~ or mass-to-charge ratios
~~selected in (d).~~

Claim 41. (previously presented) The method of claim 40 further comprising normalizing signal intensity values in the second plurality of mass spectra.

Claim 42. (previously presented) The method of claim 40
wherein the plurality of mass spectra is from a plurality of samples, and wherein each sample is, or is to be assigned to a class within a class set comprising two or more classes, each class being characterized by a different biological status.

Claim 43. (canceled)

Claim 44. (canceled)

Claim 45. (canceled)

Claim 46. (canceled)

Claim 47. (currently amended) The method of claim 39 40 further comprising modifying the second plurality of mass spectra by adding estimates for missing signals.

Claim 48. (canceled)

Claim 49. (canceled)

Claim 50. (currently amended) A computer readable medium comprising:

(a) code for detecting signals including signal intensities in a plurality of spectra,
wherein each spectrum in the plurality of spectra comprises data representing signal strength as a

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function of time-of-flight, mass-to-charge ratio, or a value derived from time-of-flight or mass-to-charge ratio;

(b) code for forming at least one signal cluster by clustering signals with similar ~~times-of-flights~~ ~~time-of-flights~~, mass-to-charge ratios, or values derived from ~~times-of-flights~~ ~~time-of-flights~~ or mass-to-charge ratios;

code for determining a predetermined number of signals, wherein the predetermined number of signals represents a minimum number of signals for a selected signal cluster;

(e) code for selecting one or more signal clusters from the plurality of signal clusters if the number of signals in a signal cluster meets or exceeds the a predetermined number of signals and excluding one or more signal clusters from the plurality of signal clusters if the number of signals in a signal cluster is below the predetermined number of signals; and

(d) code for selecting the ~~times-of-flights~~ ~~time-of-flights~~, the mass-to-charge ratios, or the values derived from the ~~times-of-flights~~ ~~time-of-flights~~ or the mass-to-charge ratios of the selected one or more signal clusters.

Claim 51. (currently amended) The computer readable medium of claim 50 wherein the plurality of mass spectra is a first plurality of mass spectra and wherein the ~~method~~ computer readable medium further comprises:

(e) code for forming a second plurality of mass spectra, wherein the second plurality of mass spectra is formed using the ~~times-of-flights~~ ~~time-of-flights~~, the mass-to-charge ratios, or the values derived from the ~~times-of-flights~~ ~~time-of-flights~~ or mass-to-charge ratios obtained from the selected signal clusters.

Claim 52. (currently amended) The computer readable medium of claim ~~50~~ 51 further comprising code for normalizing signal intensity values in the second plurality of mass spectra.

Claim 53. (canceled)

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Claim 54. (canceled)

Claim 55. (canceled)

Claim 56. (canceled)

Claim 57. (canceled)

Claim 58. (currently amended) The computer readable medium of claim 51 ~~50~~ further comprising code for modifying the second plurality of mass spectra by adding estimates for missing signals.

Claim 59. (previously presented) A system comprising:

a gas phase ion spectrometer;

a digital computer adapted to process data from the gas phase ion spectrometer; and

the computer readable medium of claim 50 in operative association with the digital computer.

Claim 60. (canceled)

Claim 61. (canceled)

Claim 62. (canceled)

Claim 63. (new) The method of claim 39 wherein the plurality of spectra is generated using a surface enhanced laser desorption ionization process.

Claim 64. (new) The computer readable medium of claim 50 wherein the plurality of spectra is generated using a surface enhanced laser desorption ionization process.